

REMARKS

Claim 1 was filed and is pending. Claim 1 was rejected under 35 U.S.C. § 103. Claim 1 has been amended. Claims 2-7 have been added. Reconsideration and allowance of Claim 1, and allowance of Claims 2-7, is requested.

Rejection of Claims under 35 U.S.C. § 103

In the Office Action, Claim 1 was rejected under 35 U.S.C. § 103 as unpatentable over Goshey et al. (U.S. Patent No. 6,205,527) in view of Glasser et al. (U.S. Patent No. 5,651,109). The Office Action stated:

Goshey teaches a method for creating a protected region of a data storage device of a computational device (Goshey: column 2 lines 46-65: a method of protecting data ... preparing a storage media of the peripheral storage device to be a protection enabled media), operating system data representing the operating system of the computational device being stored on the data storage device (Goshey: column 2 lines 50-62: a set of data stored in a hard drive of the computer system ... include operating system files and a set of boot files), the method comprising the steps of maintaining a record of operating system data accessed by the computational device after a reset of the computational device and until predetermined functionality of the operating system becomes available (Goshey: column 2 lines 50-51: selecting a backup set of data ... include boot files; the boot file or boot record is a record of operating system data accessed by a computer before the operating system becomes available which is well known in the art); and storing a copy of the operating system data recorded during the step of maintaining in the unprotected region of the data storage device (Goshey: column 2 line 51: a set of data stored in a hard drive; it means that the boot file and operating system files are stored in the hard drive before it is being copied to the protection enabled media); and storing a copy of any data stored on the data storage device in the protected region of data storage device (Goshey:

column 2 lines 53-59: copy the backup set of data from hard drive to the storage media.

Goshey does not explicitly teach the method of establishing protected and unprotected region. However, Glasser teaches the method of generating protected and unprotected memory region (Glasser: column 18, lines 35-42: generating both a protected memory region and an unprotected memory region). It would have been obvious to one having ordinary skill in the art at the time of the invention to employ the teachings of Glasser within the system of Goshey because it will allow the invention disclosed by Goshey to generate a protected and unprotected region within the hard drive. It also reduces the amount of devices required to establish a protected memory region.

As amended, Claim 1 recites (emphasis added):

A method for creating a protected region of a data storage device of a computational device, the protected region being a region within which data cannot be accessed without proper authorization, operating system data representing the operating system of the computational device being stored on the data storage device, the method comprising the steps of:

maintaining a record of operating system data accessed by the computational device after a reset of the computational device and until predetermined functionality of the operating system becomes available; and

establishing protected and unprotected regions of the data storage device, the step of establishing further comprising the steps of:

storing a copy of the operating system data recorded during the step of maintaining in the unprotected region of the data storage device; and

storing protected data in the protected region of the data storage device, wherein the protected data comprises the operating system data and any other data to which it is desired to prevent access without proper authorization.

Applicants' specification states, at page 1, lines 18-30

(emphasis added):

It can be desirable to protect sensitive data stored on the data storage device from unauthorized access. ... In particular, it can be desirable to establish a defined region of the data storage device within which

data cannot be accessed without proper authorization, the defined region being treated as a separate data storage "volume." Access to that volume (a "protected volume") can be prevented, and authorization to access the protected volume can be determined, using conventional cryptographic techniques.

As stated in Applicants' specification at page 5, lines 20-23, "[t]he invention enables a protected volume of a data storage device to be established in a manner that overcomes the ... limitations of previous methods of establishing a protected volume." Thus, in Claim 1 (as now made explicit in Claim 1 by an amendment to Claim 1 made herein), a "protected" region is a region of a data storage device within which data cannot be accessed without proper authorization.

In the Office Action it is contended that "Goshey teaches a method for creating a protected region of a data storage device of a computational device (Goshey: column 2 lines 46-65: a method of protecting data ... preparing a storage media of the peripheral storage device to be a protection enabled media)" (emphasis added). However, it is clear that Goshey et al.'s usage of "protect" is different from that of Claim 1, and that difference makes clear that Goshey et al. do not teach or suggest in any way a method for creating a protected region of a data storage device of a computational device, as recited in Claim 1.

Goshey et al. teach, at column 1, lines 17-21 of the Goshey et al. patent, that "[t]his invention relates ... particularly to methods and apparatus for intelligently backing up selected data from a host computer's main storage drive to prevent loss of data or user productivity." Goshey et al. teach, at column 2,

lines 20-23 of the Goshey et al. patent, that "there is a need for an intelligent backup system and method for implementing [a] system to protect data of a computer's storage drive in case a system failure occurs" (emphasis added). Goshey et al. then teach, at column 2, lines 31-36 of the Goshey et al. patent, that "the present invention fills [this need] by providing an intelligent backup and restore system that prevents downtime productivity losses, and assists [a] user in trouble shooting [a] failure, repairing the failure if possible, and restoring [a] failed system back to its pre-failure condition." Thus, as is clear, when Goshey et al. discuss protecting data, Goshey et al. are referring to preventing a loss of data due to a hardware failure, not preventing unauthorized access to data, as is the case in the method of Claim 1.

In the Office Action it is further contended that "Goshey teaches ... storing a copy of the operating system data recorded during the step of maintaining in the unprotected region of the data storage device (Goshey: column 2 line 51: a set of data stored in a hard drive; it means that the boot file and operating system files are stored in the hard drive before it is being copied to the protection enabled media); and storing a copy of any data stored on the data storage device in the protected region of data storage device (Goshey: column 2 lines 53-59: copy the backup set of data from hard drive to the storage media" (emphasis added). First, as discussed above, and as acknowledged in the Office Action ("Goshey does not explicitly teach the method of establishing [a] protected ... region"), Goshey et al.

do not teach or suggest establishing a protected region as recited in Claim 1. Therefore, it is simply not possible for Goshey et al. to teach or suggest storing data in such a protected region, as contended in the Office Action. Moreover, if the two steps of storing recited in Claim 1 are taught by Goshey et al. as contended in the Office Action, then the data storage device of Claim 1 is, illogically, both the hard drive taught by Goshey et al. and the storage media of the peripheral storage device taught by Goshey et al. Thus, it is clear the sections of the Goshey et al. patent identified in the Office Action do not teach or suggest the steps of storing recited in Claim 1.

In fact, Goshey et al. do not teach or suggest a method as recited in Claim 1 because Goshey et al. are concerned with addressing a problem that is completely different from the one to which the method of Claim 1 is directed. As taught by Goshey et al. at column 4, line 56 to column 5, line 5 of the Goshey et al. patent:

Most importantly, the intelligent backup and restore system of the present invention will substantially eliminate the tremendous downtime that is typical of when a hard disk crash is experienced and no backup or simple conventional backup techniques are used. As a result, user productivity will no longer suffer when hard disk failures occur. ... When a new hard disk is prepared or the old hard disk is repaired, the system will restore the operating system and data files to their current state as now present on the peripheral storage device media. Upon re-booting, the newly restored hard disk will once again become the boot device.

In contrast, as stated above and in Applicants' specification at page 1, lines 18-25, the instant invention is concerned with

"protect[ing] sensitive data stored on [a] data storage device from unauthorized access" by "establish[ing] a defined region of the data storage device within which data cannot be accessed without proper authorization." The difference in problems addressed by Goshey et al. and Applicants results in the production of different inventions having different characteristics, as discussed above.

In the Office Action it is contended that "Glasser teaches the method of generating protected and unprotected memory region (Glasser: column 18, lines 35-42: generating both a protected memory region and an unprotected memory region)."

Glasser et al teach, at column 18, lines 36-42 of the Glasser et al. patent, "generating both a protected memory region and an unprotected memory region within [a] plurality of hierarchically arranged memory regions, ... [a] host processor being unable to access said protected memory region and able to access said unprotected memory region." Glasser et al. also teach, at column 20, lines 4-7 of the Glasser et al. patent, "receiving in the protected memory region data from the host processor, said host processor being able to add data to said protected memory region and, once added, being unable to access said added data."

Claim 1 recites "establishing protected and unprotected regions of the data storage device, the step of establishing further comprising the steps of: storing a copy of the operating system data recorded during the step of maintaining in the unprotected region of the data storage device; and storing

protected data in the protected region of the data storage device, wherein the protected data comprises the operating system data and any other data to which it is desired to prevent access without proper authorization." Glasser et al. do not teach or suggest a step of "storing a copy of ... operating system data ... in [an] unprotected region of [a] data storage device," as must be the case for Glasser et al. to teach or suggest the step of "establishing protected and unprotected regions of the data storage device," recited in Claim 1. Nor do Glasser et al. appear to teach or suggest "storing protected data in [a] protected region of [a] data storage device [that] comprises ... data to which it is desired to prevent access without proper authorization," as also must be the case for Glasser et al. to teach the step of "establishing protected and unprotected regions of the data storage device," recited in Claim 1. Thus, assuming arguendo that it would be obvious to combine the teaching of Glasser et al. with that of Goshey et al., such combination would still not result in a method as recited in Claim 1.

Additionally, the Office Action stated that "[i]t would have been obvious to one having ordinary skill in the art at the time of the invention to employ the teachings of Glasser within the system of Goshey because it will allow the invention disclosed by Goshey to generate a protected and unprotected region within the hard drive." Assuming arguendo that Glasser et al. do teach generating protected and unprotected memory regions, as contended in the Office Action, of course using that teaching with the invention of Goshey et al. will "allow the invention disclosed by

Goshey to generate a protected and unprotected region." This is a tautological statement that does not in any way support the contention that it would have been obvious to combine the teaching of Glasser et al. with that of Goshey et al.

The Office Action went on to state that "[i]t also reduces the amount of devices required to establish a protected memory region." Assuming arguendo that Goshey et al. and Glasser et al. teach as contended in the Office Action, there is nothing in such teaching that suggests that using the teaching of Glasser et al. with the teaching of Goshey et al. would reduce the number of devices required to implement the invention of Goshey et al. The statement in the Office Action appears to be wholly unsubstantiated.

As demonstrated by the foregoing remarks, Claim 1 is allowable over the combination of Goshey et al. and Glasser et al. Moreover, as is clear from those remarks, the amendments made to Claim 1 herein have not been made to distinguish the method of that claim over the teaching of Goshey et al. and Glasser et al. Rather, the amendments to Claim 1 are made to recite more clearly (e.g., more explicitly) or more accurately the characteristics of the method, so as to make clearer the distinctions of the method over the teaching of Goshey et al. and Glasser et al. In particular, the recitation in Claim 1 that "the protected region [is] a region within which data cannot be accessed without proper authorization" merely makes explicit what constitutes a protected region (which was already recited in Claim 1), as described in Applicants' specification at, for

example, page 1, lines 23-30. The amendments to the step of establishing are made to clarify the language of that step, i.e., to make clear that two regions are established and to make clear that the further recited steps comprise the step of establishing. The amendments to the step of storing data in the protected region are made to more accurately recite the data that is stored in the protected region: all operating system data and any other data that it is desired to protect (i.e., to which it is desired to control access) during operation of the computational device in a secure mode (see, e.g., Applicants' specification at page 8, line 35 to page 9, line 4; page 11, line 33 to page 12, line 6; and page 38, lines 23-25).

In view of the foregoing, it is requested that the rejection of Claim 1 under 35 U.S.C. § 103 be withdrawn.

New Claims

Claims 2-7 have been added to more fully claim the invention.

Support for Claim 2 can be found in Applicants' specification at, for example, page 8, line 35 to page 9, line 4. Support for Claim 3 can be found in Applicants' specification at, for example, page 10, lines 4-14. Support for Claim 4 can be found in Applicants' specification at, for example, page 11, lines 3-20. Support for Claim 5 can be found in Applicants' specification at, for example, page 11, line 21 to page 12, line 6.

Each of Claims 2-5 depends on Claim 1, either directly or indirectly, and is therefore allowable as dependent on an allowable claim.

Claims 6 and 7 recite, respectively, an apparatus for creating a protected region of a data storage device of a computational device, and a computer readable medium or media encoded with one or more computer programs and/or data structures for creating a protected region of a data storage device of a computational device that each include limitations that are similar to those of the method of Claim 1. Therefore, Claims 6 and 7 are allowable over the teaching of Goshey et al. and Glasser et al. for the same reasons as given above for the allowability of Claim 1 over that teaching.

CONCLUSION

Claim 1 was pending and was rejected. Claim 1 has been amended. Claims 2-7 have been added. In view of the foregoing, it is requested that Claims 1-7 be allowed. If the Examiner wants to discuss any aspect of this application, the Examiner is invited to telephone Applicants' undersigned attorney at (408) 945-9912.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 2, 2004.

6-2-04 David R. Graham
Date Signature

Respectfully submitted,

David R. Graham
David R. Graham
Reg. No. 36,150
Attorney for Applicants